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### **MOUSE ANTI HUMAN CD49d MONOCLONAL ANTIBODY**

<b>CATALOG NUMBER:</b>	MAB1383
<b>LOT NUMBER:</b>	20101026
<b>QUANTITY:</b>	100 µg
<b>CONCENTRATION:</b>	1.0 mg/mL
<b>SPECIFICITY:</b>	Recognizes the 80kDa alpha chain of VLA-4. Reacts with monocytes, T cells, B cells, thymocytes and Langerhans cells. Can be used in basic studies of VLA-4 mediated adhesion and its interaction with the VCAM-1 structure. HP2/1 inhibits cell binding to soluble VCAM-1.
<b>IMMUNOGEN:</b>	JM leukemia line
<b>ISOTYPE:</b>	IgG1
<b>CLONE NAME:</b>	HP2/1
<b>APPLICATIONS:</b>	Flow cytometry: 1µg/5 X 10 <sup>5</sup> cells Immunohistology on frozen tissue sections Immunoprecipitation Optimal working dilutions must be determined by end user.
<b>SPECIES CROSS-REACTIVITY:</b>	Rat, pig, rhesus monkey
<b>FORMAT:</b>	Purified immunoglobulin - Ig fraction
<b>PRESENTATION:</b>	Liquid in Phosphate Buffered Saline, pH 7.4 with 0.1% Sodium Azide.
<b>STORAGE:</b>	Store at -20°C in undiluted aliquots. May be stored at -2-8°C for short term use. Avoid repeated freeze-thaw cycles.
<b>REFERENCES:</b>	1. Sanchez-Madrid, F. et al. (1986). <i>Eur. Journal Immunology</i> <b>16</b> : 1343-1349. 2. Weller et al. (1991). <i>P.N.A.S. USA</i> <b>88</b> : 7430. 3. Mattila, P. et al. (1992). <i>Int. J. Cancer</i> <b>52</b> : 918-923. 4. Leukocyte Typing Workshop V, p. 1646-1648.

**Important Note:** During shipment, small volumes of product will occasionally become entrapped in the seal of the product vial. For products with volumes of 200 µL or less, we recommend gently tapping the vial on a hard surface or briefly centrifuging the vial in a tabletop centrifuge to dislodge any liquid in the container's cap.

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**MOUSE ANTI-HUMAN INTEGRIN  $\alpha$  4  
MONOCLONAL ANTIBODY**

**CATALOG NUMBER:** MAB1955

**LOT NUMBER:** 18080112

**QUANTITY:** 100  $\mu$ L

**SPECIFICITY:**  $\alpha$ 4 integrin. The  $\alpha$ 4 $\beta$ 1 integrin receptor recognizes an RGD-independent alternative adhesion site in the CS-1 region of fibronectin.

**ISOTYPE:** IgG<sub>3</sub>

**CLONE NAME:** P4C2

**APPLICATIONS:** Immunofluorescence and immunoprecipitation.  
  
Inhibits attachment of hematopoietic cells and T-lymphocytes but not fibroblasts to fibronectin; typical titer is >1:1,000  
Aggregation of Jurkat cells to 1:1600 dilution

**FORMAT:** Liquid ascites containing sodium azide as a preservative.

**STORAGE/HANDLING:** Store at -20°C in undiluted aliquots for up to 12 months. Avoid repeated freeze/thaw cycles.

**REFERENCES:**

1. Wayner, E.A., *et al.*, *J. Cell Biol.* **109**:1321 (1989).
2. Wayner, E.A., *et al.*, *J. Cell Biol.* **121**:1141 (1993).
3. Rahman, S. *et al.* (1998). *Biochem. J.* **335**: 247-257.

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### MOUSE ANTI-HUMAN INTEGRIN $\alpha 4$ MONOCLONAL ANTIBODY

**CATALOG NUMBER:** MAB1954

**LOT NUMBER:** 20020923

**QUANTITY:** 100  $\mu$ L

**SPECIFICITY:** Human integrin  $\alpha 4$ . The  $\alpha 4\beta 1$  integrin receptor recognizes an RGD-independent alternative adhesion site in the CS-1 region of fibronectin.

**ISOTYPE:** IgG<sub>2b</sub>

**CLONE NAME:** P4G9

**APPLICATIONS:** Immunocytochemistry on Jurkat cells at 1:1,600.  
Inhibits attachment of hematopoietic cells and fibroblasts to fibronectin (note: sodium azide should be removed prior to attachment assay).  
Optimal working dilutions must be determined by the end user.

**FORMAT:** Ascites.

**STORAGE/HANDLING:** Store at – 20 °C in undiluted aliquots for up to 12 months. Avoid repeated freeze/thaw cycles.

**REFERENCES:**

1. Wayner, E.A., et al., *J. Cell Biol.* **109**:1321 (1989).
2. Wayner, E.A., et al., *J. Cell Biol.* **121**:1141 (1993).
3. *Exp. Hematology* **24**:158-168 (1996).
4. *J. Biol. Chemistry* **274**(43): 30906-30913 (1996).

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**Monoclonal  
Antibodies  
Detecting  
Human  
Antigens**

# CD49d (Anti-VLA- $\alpha$ 4)



Pure  
PE\*

Catalog No. 340976  
Catalog No. 340296

200  $\mu$ g (0.01% azide, 1 mg/mL)  
50 Tests

## DESCRIPTION

### Specificity

CD49d (Anti-VLA- $\alpha$ 4) recognizes the 150-kilodalton (kd)  $\alpha$  chain of very-late antigen (VLA)-4, a member of the integrin family of cell adhesion molecules.<sup>1-3</sup> VLA-4, like other integrins, is a noncovalently associated heterodimeric glycoprotein composed of  $\alpha$  and  $\beta$  subunits and is involved in cell-cell and cell-extracellular matrix interactions.<sup>1-4</sup> The  $\beta$  chain of the VLA-4 complex is the CD29 antigen, a 130-kd glycoprotein.<sup>2</sup> The CD29 antigen, also known as the  $\beta$ 1 subunit, is common to the VLA family of integrins.<sup>1,2,4</sup> When acting as a matrix receptor, the CD49d antigen binds to CS-1, an alternatively spliced domain of fibronectin.<sup>1,2,5,6</sup> When functioning as a cell receptor, the CD49d antigen binds to the vascular cell-adhesion molecule-1 (VCAM-1).<sup>1,4,5</sup> The interaction between the CD49d antigen and VCAM-1 is known to play an important role in stabilizing the adhesion of lymphocytes to endothelial cells<sup>4,7</sup> and in mediating B-lymphocyte precursor/bone marrow stromal cell adhesion.<sup>5</sup> The CD49d antigen, when associated with the  $\beta$ 7 integrin, forms a lymphocyte homing receptor for Peyer's patch, binding to the mucosal vascular addressin MAdCAM-1.<sup>8</sup> The CD49d antigen is also involved in CD3-dependent CD4<sup>+</sup> T-lymphocyte activation via its interaction with fibronectin.<sup>6,9</sup>

### Antigen Distribution

The CD49d antigen is primarily expressed on T and B lymphocytes and weakly expressed on monocytes.<sup>1,10</sup>

### Functional Characteristics

CD49d (Anti-VLA- $\alpha$ 4) can block or enhance fibronectin-stimulated T-lymphocyte proliferation.<sup>9,11</sup> It immunoprecipitates three proteins of 150 kd, 85 kd, and 75 kd under both reducing and nonreducing conditions from HPB-ALL cells, B lymphoblasts, peripheral blood lymphocytes, and IL-2-dependent cell lines.<sup>10</sup>

### Clone

CD49d (Anti-VLA- $\alpha$ 4), clone L25, is derived from the fusion of mouse Sp2/0 cells with popliteal lymph node cells from a BALB/c mouse immunized with a CD8<sup>+</sup> T-cell line.<sup>10,12</sup>

### Ig Chain Composition

CD49d (Anti-VLA- $\alpha$ 4) is composed of mouse IgG<sub>2b</sub> heavy chains and kappa light chains.

## RESEARCH APPLICATIONS

Studies of:

- leucocyte integrins<sup>2</sup>
- cell-cell and cell-extracellular matrix adhesion<sup>1,2</sup>
- B-lymphocyte precursor/bone marrow stromal cell adhesion<sup>5</sup>
- T-lymphocyte cytokine production<sup>13-18</sup>
- signal transduction and T-cell activation<sup>6,9,11,15,17,19</sup>
- hematogenous tumor metastasis and expression of integrin  $\alpha$ 4 on melanoma, Burkitt's lymphoma, and kidney carcinoma cells<sup>20,21</sup>
- immunoprecipitation of integrin  $\alpha$ 4<sup>10</sup>
- interactions between integrin  $\alpha$ 4 and VCAM-1<sup>22</sup>

\* US Patent No. 4,520,110; European Patent No. 76,695; Canadian Patent No. 1,179,942

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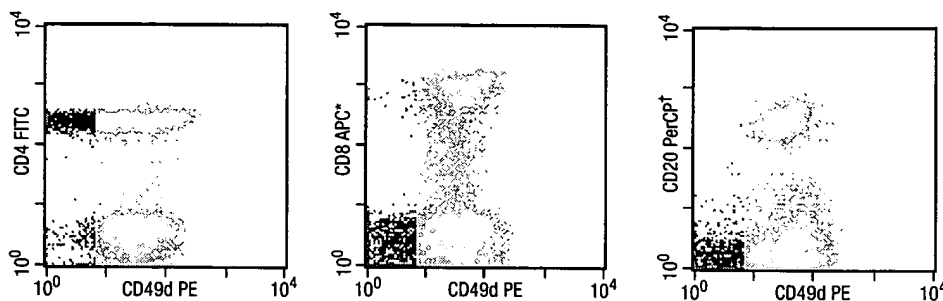
CD49d (Anti-VLA- $\alpha$ 4) PE  
Cat. No. 340296  
20  $\mu$ L/test

Method for Direct  
Immunofluorescence

Refer to our website ([www.bdfacs.com](http://www.bdfacs.com)) or your local BD representative for the lyse/wash method for direct immunofluorescence.

Representative Data

Performed on whole blood. Laser excitation is at 488 nm.



Analyzed with a FACSTM Brand Flow Cytometer

## HANDLING AND STORAGE

The monoclonal antibody is supplied as 200  $\mu$ g purified immunoglobulin in 0.2 mL (1.0 mg/mL) of phosphate-buffered saline (PBS) containing 0.01% sodium azide without gelatin. The PE conjugate is supplied as 1.6  $\mu$ g in 1.0 mL (1.6  $\mu$ g/mL) of PBS containing gelatin and 0.1% sodium azide. Vials should be stored at 2° to 8°C. Conjugated forms should not be frozen and should be protected from prolonged exposure to light. Each reagent is stable for the period shown on the bottle label when stored as directed.

## WARRANTY

The products sold hereunder are warranted only to conform to the quantity and contents stated on the label at the time of delivery to the customer. There are no warranties, expressed or implied, that extend beyond the description on the label of the product. Becton Dickinson's sole liability is limited to either replacement of the products or refund of the purchase price. Becton Dickinson is not liable for property damage, personal injury, or economic loss caused by the product.

## CHARACTERIZATION

To ensure consistently high-quality reagents, each lot of monoclonal antibody is tested for conformance with characteristics of a standard reagent. Representative flow cytometric data are included in this data sheet.

## WARNING

Reagents contain sodium azide. Sodium azide is harmful if swallowed. Keep out of reach of children. Keep away from food, drink, and animal feedingstuff. Wear suitable protective clothing. If swallowed, seek medical advice immediately and show this container or label. Contact with acids liberates very toxic gas. Azide compounds should be flushed with large volumes of water during disposal to avoid deposits in lead or copper plumbing where explosive conditions can develop.

## REFERENCES

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4. Elices MJ, Osborn L, Takada Y, et al. VCAM-1 on activated endothelium interacts with the leukocyte integrin VLA-4 at a site distinct from the VLA-4/fibronectin binding site. *Cell*. 1990;60:577-584.
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\* US Patent No. 4,520,110; European Patent No. 76,695; Canadian Patent No. 1,179,942

† US Patent No. 4,876,190

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